
RP - Sanjiv Goenka Group
Growing Legacies
NPCL
Presenting
NPCL SAUR MITRA
Green Energy
Peer to Peer
Energy Trading
A Platform to Buy/Sell Green Energy

WHY PEER-TO-PEER

Reimagining How Solar Energy Is Bought and Sold

Rooftop solar is growing faster than the grid was designed for. P2P trading turns every prosumer into a participant in a local energy market — decentralizing supply and putting choice back with the consumer.

Decentralize Solar

Open up distributed generation instead of routing every unit through a single utility flow.

Power of Choice

Let consumers choose their source of supply — cleaner energy, at a better price.

Promote Competition

A transparent market where price is discovered by participants, not dictated.

Lower Cost, Lower Carbon

Reduce the cost of electricity while advancing sustainability targets with blockchain trust.

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THE PLATFORM

Introducing the NPCL Saur Mitra Platform

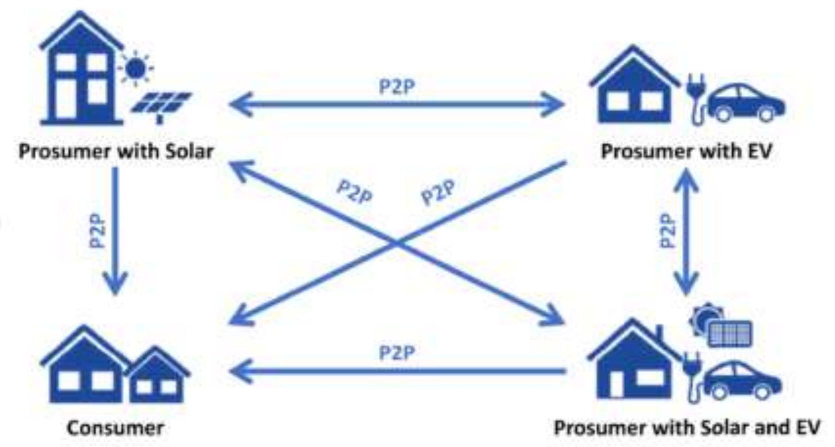
Saur Mitra is NPCL's peer-to-peer online energy-trading platform — a guided, fully digital journey from onboarding to settlement, built to make solar trading simple and trustworthy.

Objective

Guide prosumers and consumers through onboarding to the P2P platform — improving user experience and trading efficiency.

Who is a Participant?

Any consumer registered with the distribution licensee (NPCL) and enrolled in the Peer-to-Peer Energy Trading application.



01

FOUNDATION

The Technology Behind the Trust

Blockchain and Hyperledger give every energy trade a secure, transparent and tamper-proof record

What Is Blockchain?

A shared, immutable ledger that records transactions and tracks assets across a business network — so trades are verified by the network rather than a central authority.

Decentralized

Peer-to-peer trading of solar energy — faster, more efficient settlement.

Smart Contracts

Automated contracts execute trades the moment conditions are met, removing manual intervention.

Secure Transactions

Cryptographic security makes every transaction tamper-proof, preventing fraud and unauthorized access.

Traceability

Every transaction is recorded, giving a transparent and fully auditable history of energy trades.

Four Types of Blockchain

Public

Permissionless

Open to anyone to join, validate and read. Bitcoin (digital currency) and Ethereum (smart contracts & DApps) are prime examples.

Private

Permissioned

Restricted and controlled by a single organization; only selected participants join. Hyperledger Fabric is widely used by enterprises.

Consortium

Semi-decentralized

Governed by a group of organizations sharing control under a permissioned model. R3 Corda serves financial institutions.

Hybrid

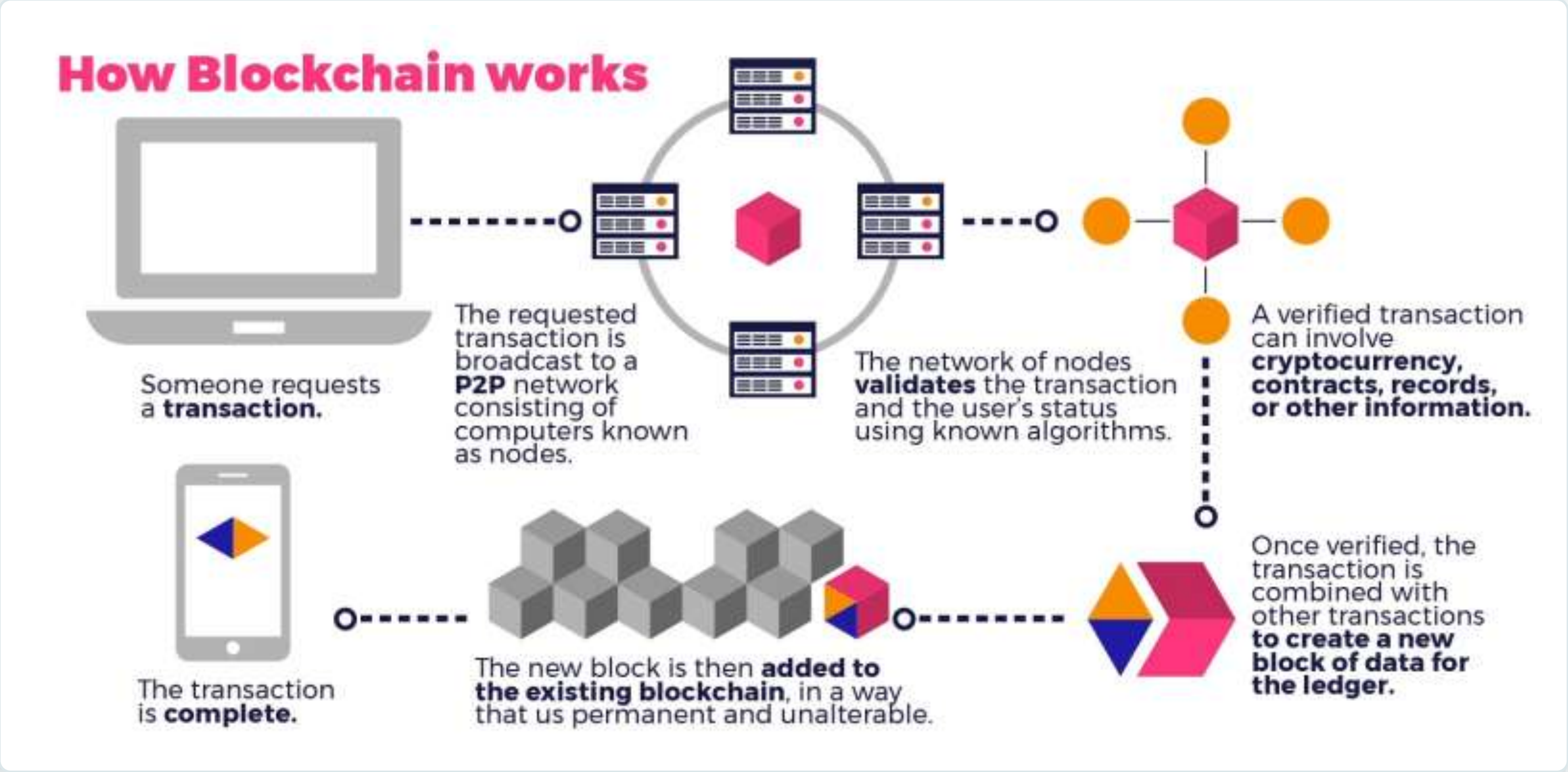
Public + Private

Combines both models — some data kept public, some private. Dragonchain lets a business choose what to share.

FOUNDATION

How Blockchain Works

A transaction is requested, broadcast to a network of nodes, validated, and — once verified — added as a permanent block to the existing chain.



FOUNDATION

Introduction to Hyperledger

Hyperledger is a global, open collaboration for building enterprise-grade, permissioned distributed-ledger frameworks — letting NPCL create a secure, customized blockchain network for energy trading.

WHY HYPERLEDGER?

- Improves the efficiency, performance and throughput of business processes.
- Provides the infrastructure and standards to build blockchain systems for industrial use.
- Removes the complexity of contractual agreements — legal issues are handled in code.
- Offers physical separation of sensitive data.
- Reduces verification effort and builds trust, optimizing scalability.

Hyperledger Technology Layers

Consensus Layer	Agrees on the order of transactions and confirms the correctness of each block.
Smart-Contract Layer	Processes transaction requests and authorizes valid transactions.
Communication Layer	Handles peer-to-peer message transport across the network.
Identity Management	Establishes trust between participants on the blockchain.
API Layer	Lets external applications and clients interface with the blockchain.

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02

THE CONCEPT

Peer-to-Peer Solar Energy Trading

A decentralized market where neighbours buy and sell surplus rooftop solar directly — secure, transparent and on their own terms.

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THE CONCEPT

How P2P Solar Energy Trading Works

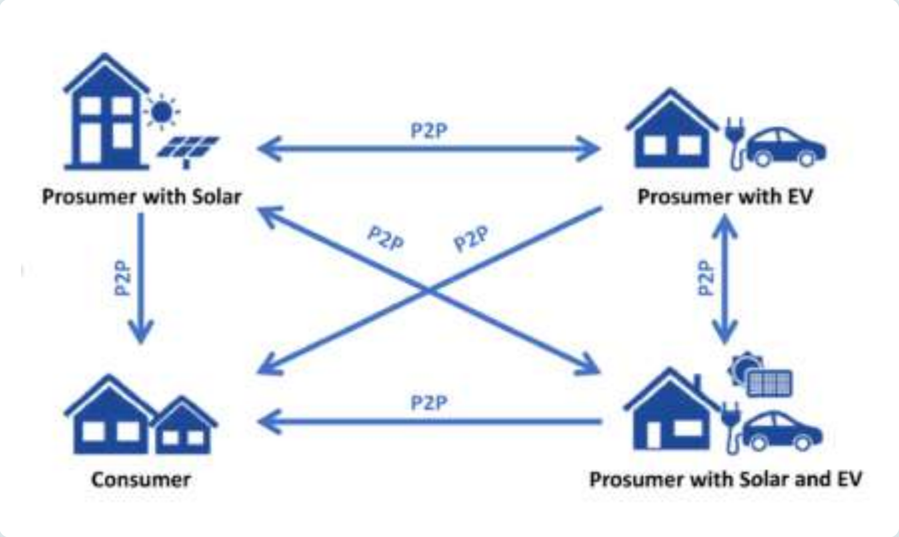
A decentralized system where individuals buy and sell excess solar energy directly with one another — every trade secured and made transparent by blockchain.

Direct Transactions Producers — like homeowners with solar — sell surplus directly to other consumers.

Cost Efficiency Removing the middleman lowers costs for both buyers and sellers.

Flexibility Participants set their own terms — pricing and who they trade with.

Sustainability Encourages renewables and reduces reliance on fossil fuels.



03

GETTING ON BOARD

The User Journey on Saur Mitra

From the NPCL website to a verified trading account — onboarding, eligibility, registration and login, step by step.

USER JOURNEY

Getting Started — Signing In

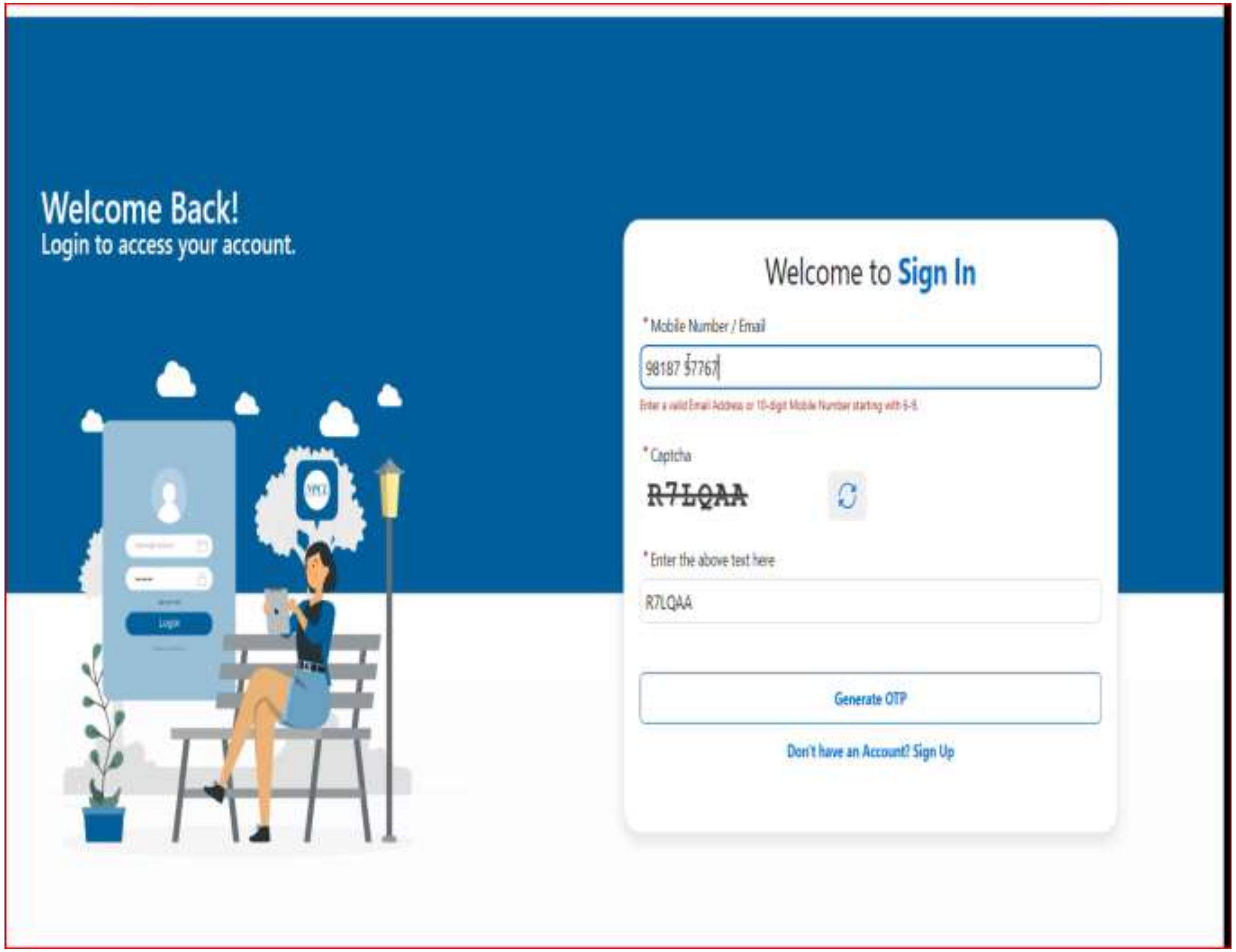
Reach the platform from the NPCL website and sign in with a registered identity.

OPTION A — MOBILE OTP

1. Visit noidapower.com and click Sign In
2. Enter registered mobile number & captcha
3. Generate OTP, then Sign In

OPTION B — EMAIL & PASSWORD

1. Click the banner on the homepage
2. Enter registered email ID & password
3. Click Sign In



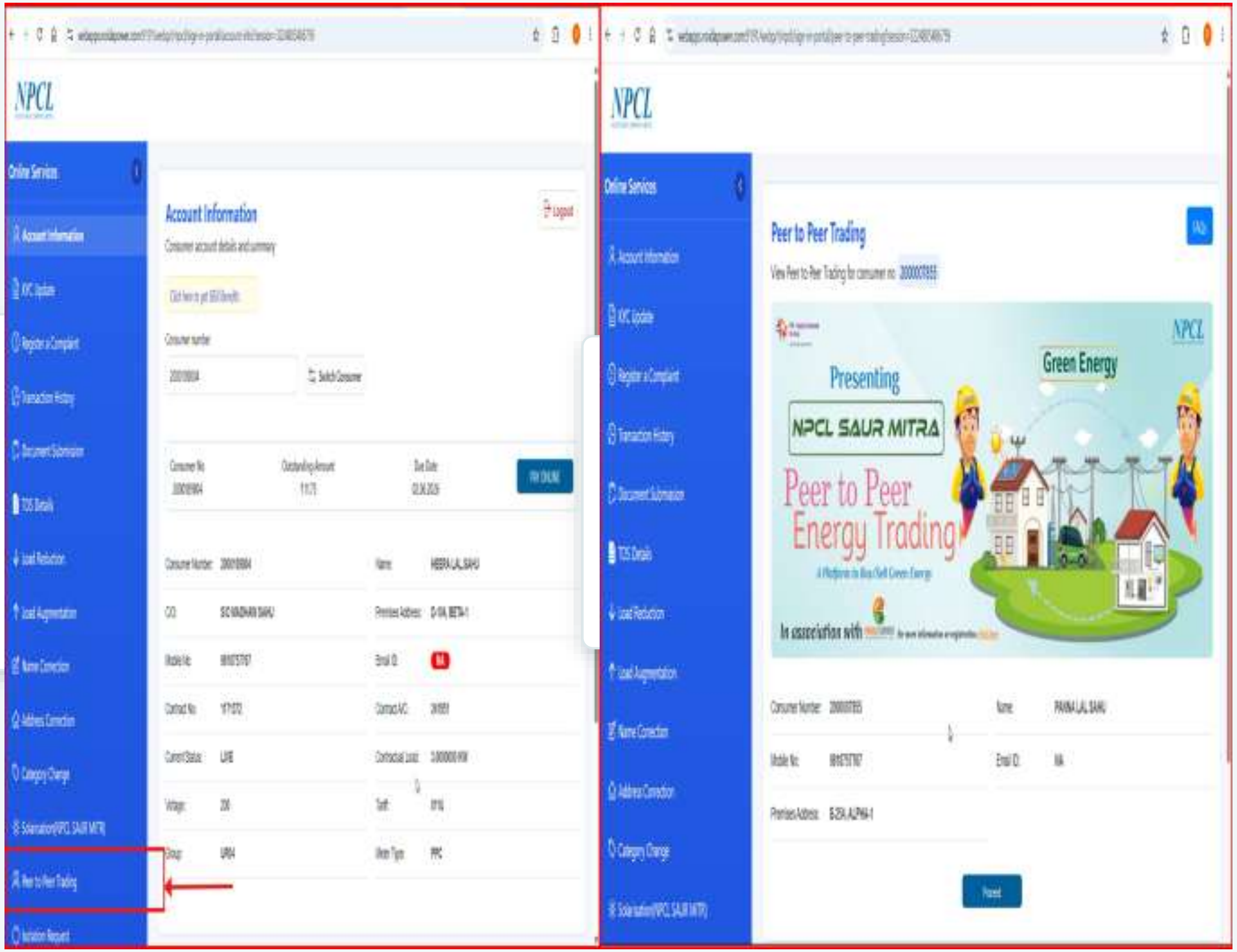
USER JOURNEY

Accessing Peer-to-Peer Trading

- On the dashboard, the P2P Trading option is shown — enabled only for eligible users.
- Selecting Peer-to-Peer Trading opens the P2P onboarding screen, where the user's details are displayed for review.

Eligibility-gated

The trading option appears only for consumers who meet the criteria.



USER JOURNEY

Eligibility Criteria for P2P Trading

To participate, both prosumers and consumers must meet the following criteria:

Prosumer — Additional

- Grid connectivity through Net Metering or Net Billing.
- Rooftop-solar (RTS) plant capacity captured in the ERP system.

Both Prosumers & Consumers

- Must be a live, active consumer of NPCL.
- Must have cleared all outstanding dues with NPCL.
- Must have completed KYC with NPCL.

USER JOURNEY

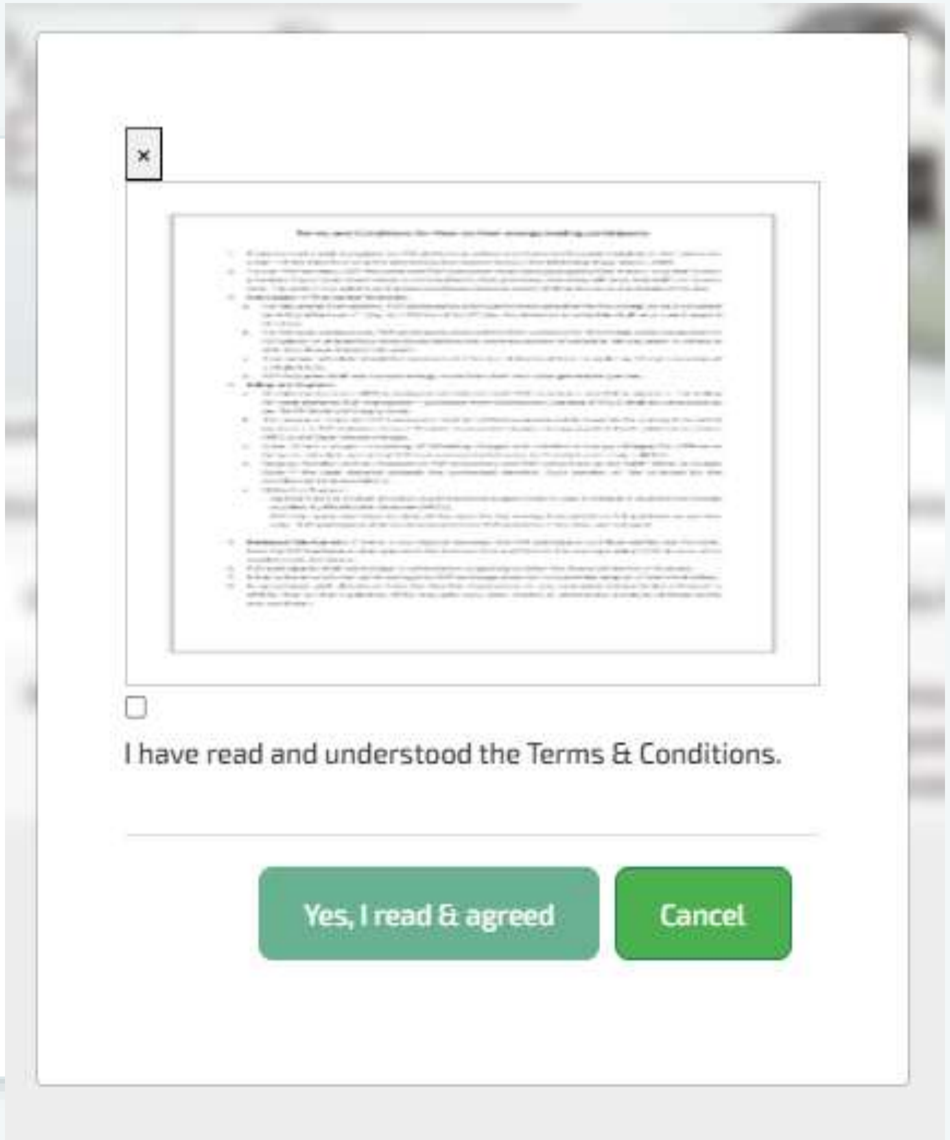
Accepting Terms & Beginning Registration

1. Both parties review and accept the platform's Terms & Conditions.

2. Click "Yes, I have read and agreed" to proceed.

3. Click Registration to join the Green Energy Exchange.

4. The user is redirected to the Peer-to-Peer Energy Trading platform.



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USER JOURNEY

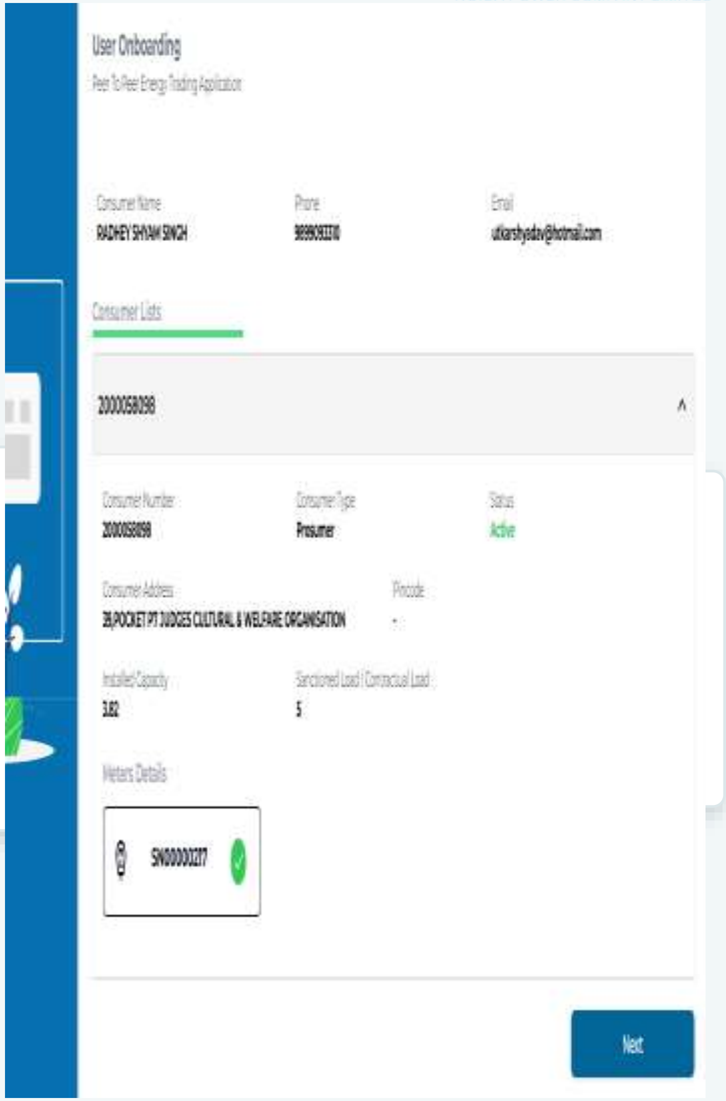
P2P User Onboarding

STEP 1 — REVIEW DETAILS

- Details are pulled automatically from the NPCL system.
- After reviewing, click Next.

STEP 2 — SET PASSWORD

- Enter and confirm a password.
- Tick "I Accept Privacy Policy".
- Click Confirm Registration.

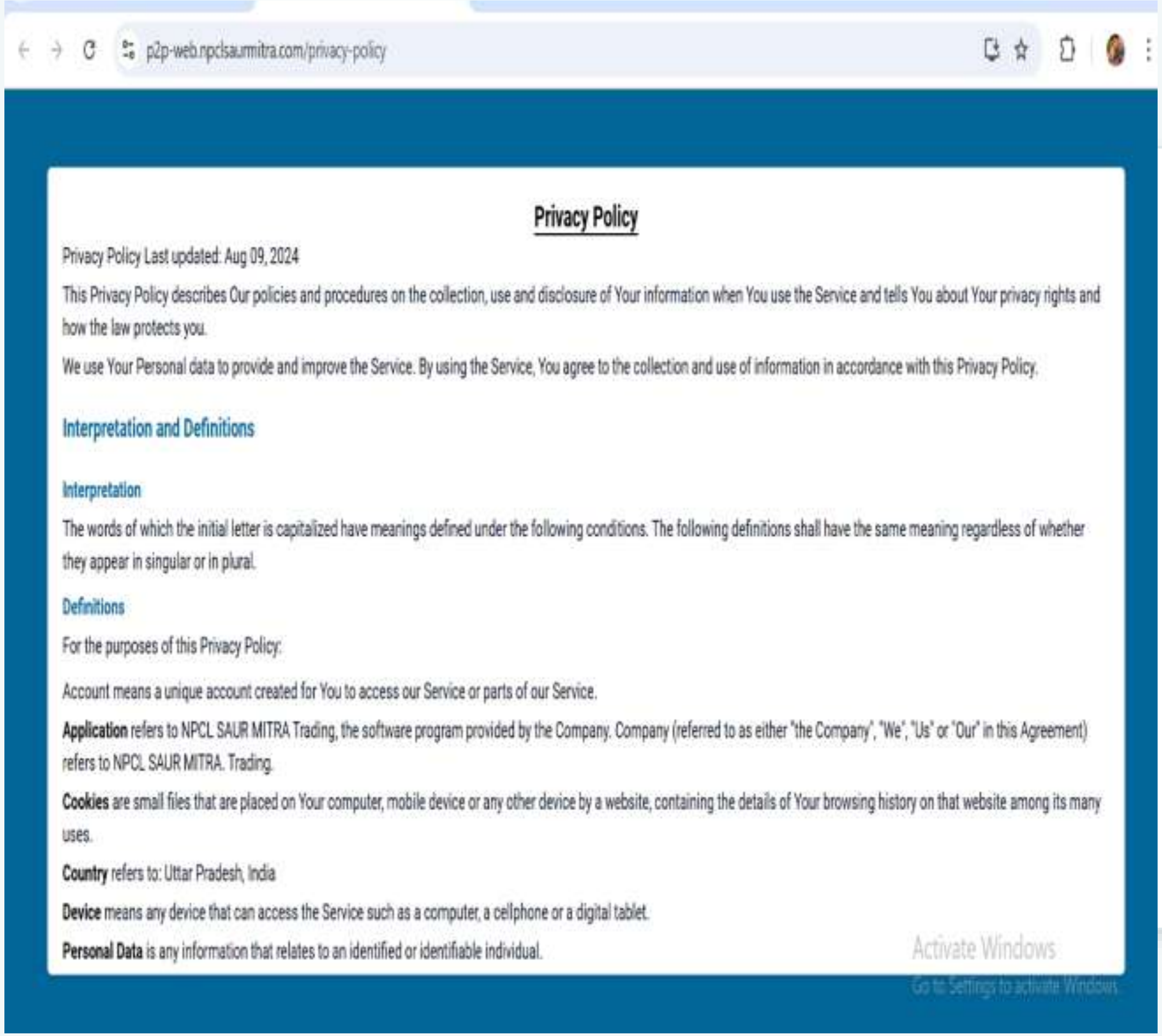


USER JOURNEY

Registration Confirmation

- Once the password is set, a confirmation pop-up is displayed.
- An email notification is sent to the registered email ID.

You're registered.



Privacy Policy

Privacy Policy Last updated: Aug 09, 2024

This Privacy Policy describes Our policies and procedures on the collection, use and disclosure of Your information when You use the Service and tells You about Your privacy rights and how the law protects you.

We use Your Personal data to provide and improve the Service. By using the Service, You agree to the collection and use of information in accordance with this Privacy Policy.

Interpretation and Definitions

Interpretation

The words of which the initial letter is capitalized have meanings defined under the following conditions. The following definitions shall have the same meaning regardless of whether they appear in singular or in plural.

Definitions

For the purposes of this Privacy Policy:

Account means a unique account created for You to access our Service or parts of our Service.

Application refers to NPCL SAUR MITRA Trading, the software program provided by the Company. Company (referred to as either "the Company", "We", "Us" or "Our" in this Agreement) refers to NPCL SAUR MITRA. Trading.

Cookies are small files that are placed on Your computer, mobile device or any other device by a website, containing the details of Your browsing history on that website among its many uses.

Country refers to: Uttar Pradesh, India

Device means any device that can access the Service such as a computer, a cellphone or a digital tablet.

Personal Data is any information that relates to an identified or identifiable individual.

Logging In to the Platform

LOGIN

1. Enter consumer number and password
2. Accept the Privacy Policy
3. Click Login

OTP VERIFICATION

1. An OTP is sent to your email & phone
2. Enter the valid OTP
3. Click Confirm

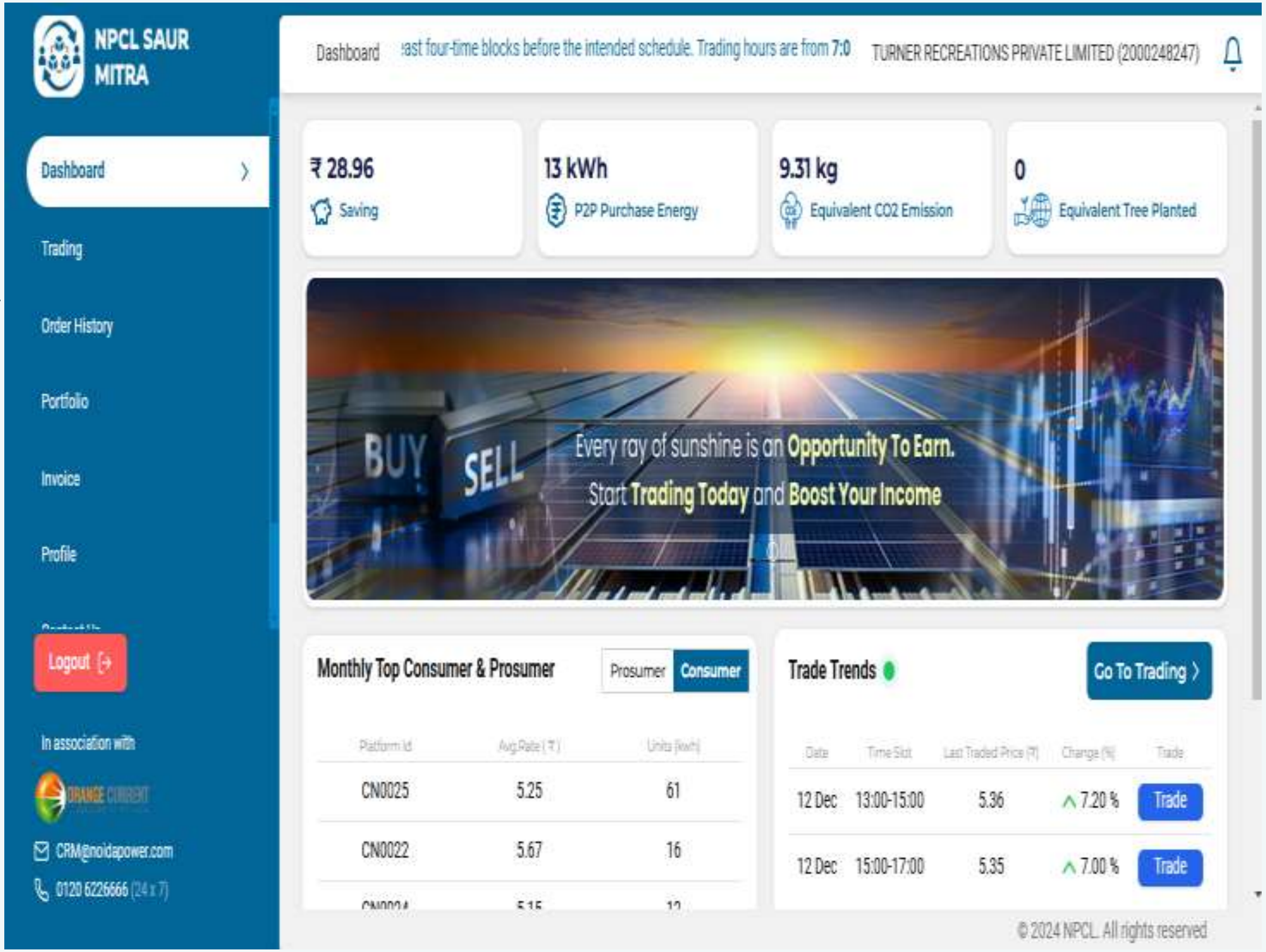
Note: the platform is available only to registered users.

USER JOURNEY

The Consumer Dashboard

After logging in as a consumer, the dashboard surfaces savings, impact and activity at a glance:

- **Headline tiles:** Total Saving, Total P2P Purchased Energy, CO_2 avoided, Trees-equivalent.
- **Banners** and a Go to Trading shortcut.
- **Leaderboards:** top consumers and prosumers by consumption.
- **Activity graph:** ordered, traded and settled units.

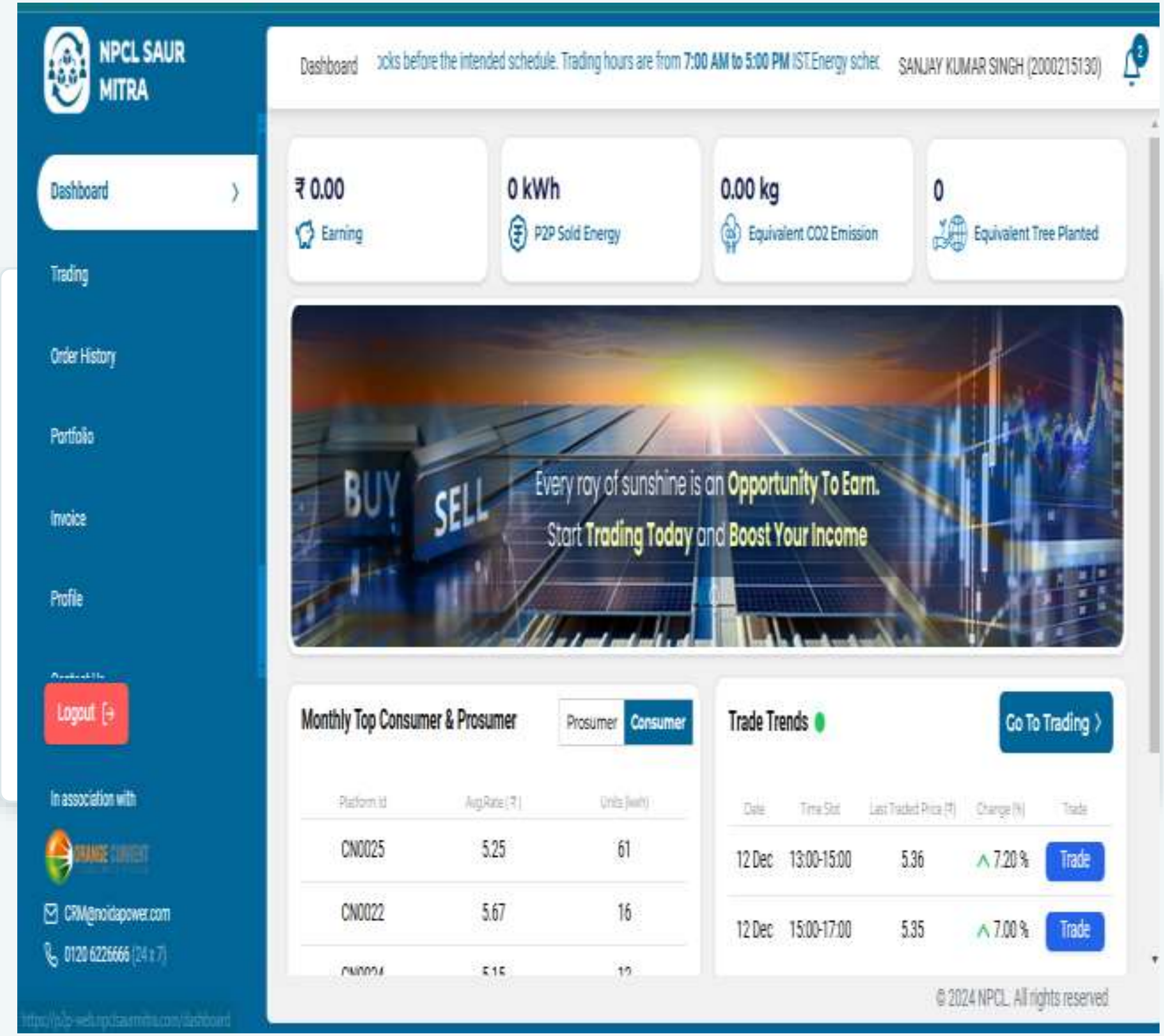


USER JOURNEY

The Prosumer Dashboard

Logging in as a prosumer presents an earnings-focused view of the same market:

- **Headline tiles:** Total Earning, Total P2P Sold Energy, CO_2 avoided, Trees-equivalent.
- **Banners** and a Go to Trading shortcut.
- **Leaderboards:** top consumers and prosumers.
- **Activity graph:** ordered, traded and settled units.



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04

THE MARKET

How Trading Works on Saur Mitra

Markets, order types, matching rules and settlement — and how every trade is verified on the blockchain.

THE MARKET

Markets, Categories & Order Types

Two markets — each offering two trading categories, with Market or Limit order options.

Intraday

Schedules submitted the same day, at least four time-blocks before start. No changes after that.

Day-Ahead

Schedules for day n must be submitted by 17:00 hrs on day (n−1).

Dynamic Trading

Price floats with the live bids and asks of all participants.

Preferential Trading

Buyers choose their preferred seller(s) to trade with.

Order Matching Rules

How the system finds and completes trades between prosumers and consumers:

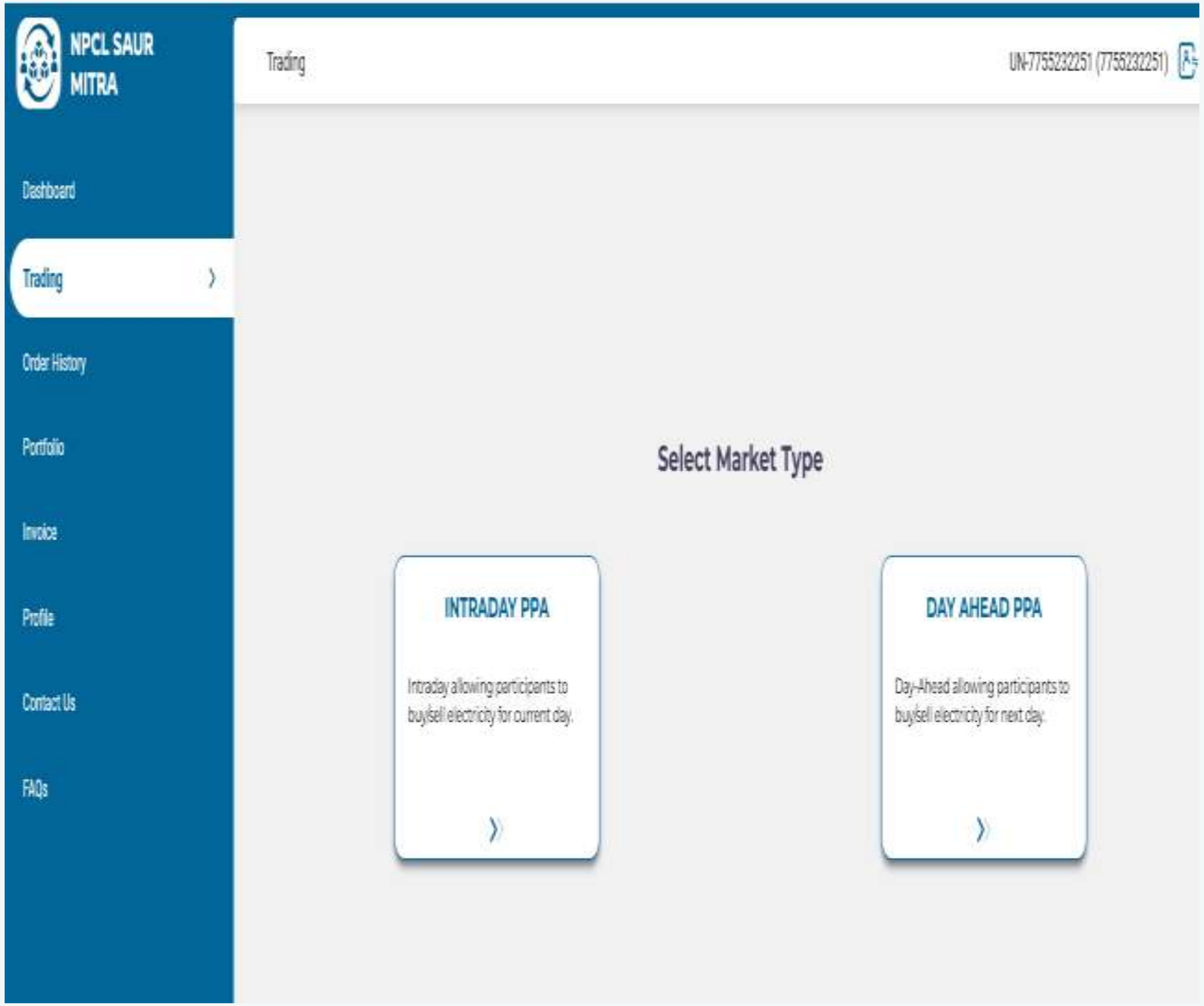
Market Orders	The system checks whether a match is possible at the current price.
Priority	Matched by price, then time — earliest order wins at equal price (first-come-first-served).
Best Orders	Highest buy price matches lowest sell price, when buy ≥ sell.
Partial Matches	An order can partially match another, producing multiple trades.
Generation Limit	Prosumers can only trade energy up to the amount they generate that day.

THE MARKET

The Trading Screen

- From the left menu, click Trading to open the trading screen.
- Choose a market type: Intraday PPA or Day-Ahead PPA.
- Intraday lets participants trade for the current day only; the schedule must be set at least four time-blocks before trading starts — no deviation after.
- For Day-Ahead, submit the schedule for day n by 17:00 hrs on day (n−1).

Trading hours Summer (Apr–Sep) 6:00 AM–7:00 PM · Winter (Oct–Mar) 7:00 AM–5:00 PM IST



THE MARKET

Trading Types & Order Types

On selecting Intraday or Day-Ahead PPA, two categories appear — Dynamic (default) and Preferential — each placed as a Limit or Market order.

Limit Order

Participant enters both Rate (₹) and Units (kWh). The trade executes at the set price.

Market Order

Participant enters Units (kWh) only. Executes immediately at the current market price.

KEY RULES

- Minimum trade is 1 unit per slot; each slot is 2 hours.
- Only one order per slot — but it can be edited before it executes, from order history.
- Prosumers can sell only. A market order executes immediately at the current market price.

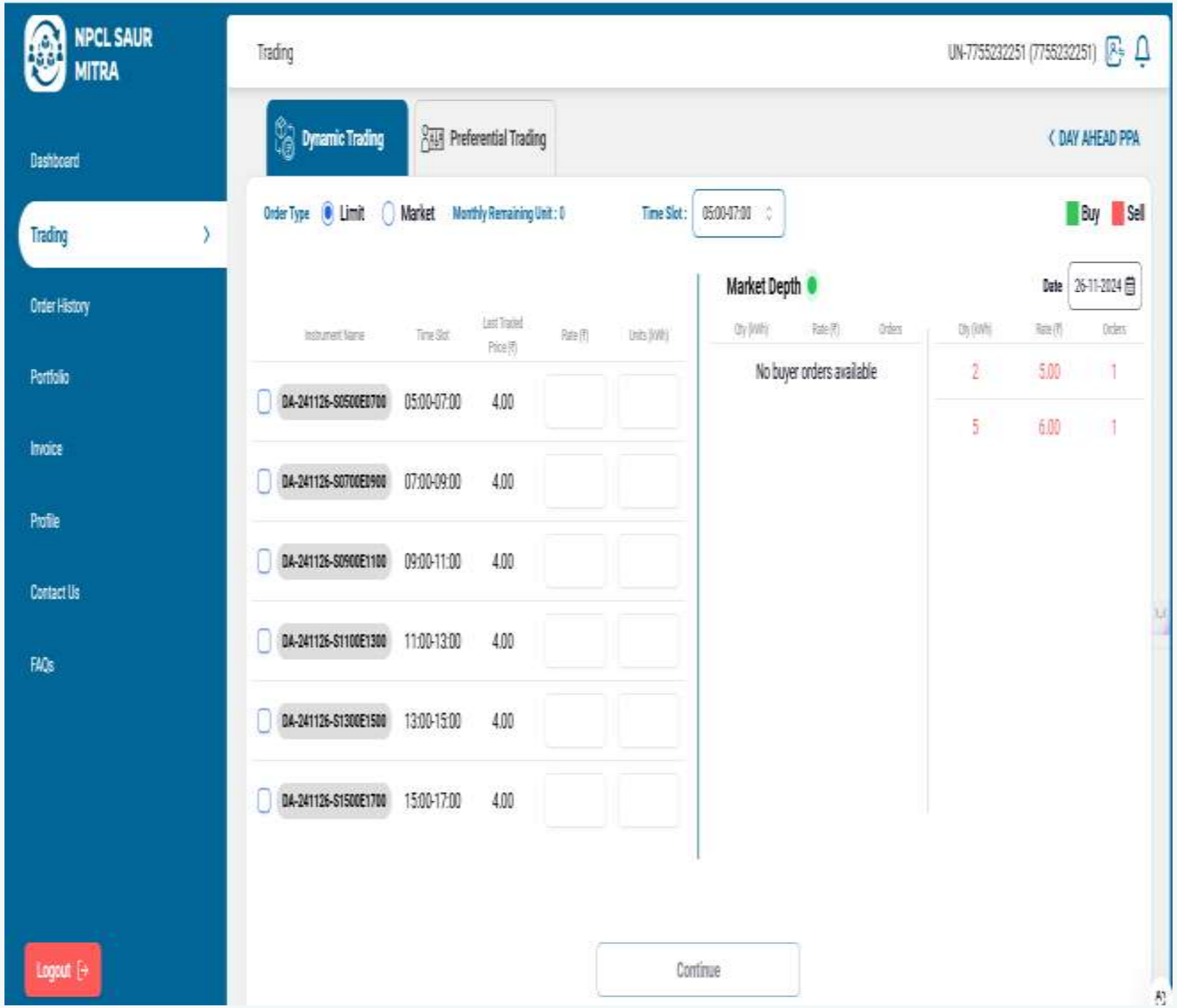
THE MARKET

Placing a Limit Order

Select order type Limit to specify exactly how much, and at what price:

- **Instrument Name** — e.g. DA-241126-S0500E0700 identifies the order.
- **Last Traded Price (₹)** shows the most recent price for that order.
- **Units (kWh)** — the consumer enters the quantity to trade.
- **Market Depth** lets the participant enter units only.

Day-Ahead: schedule energy for the next day before 5:00 PM — no changes after.



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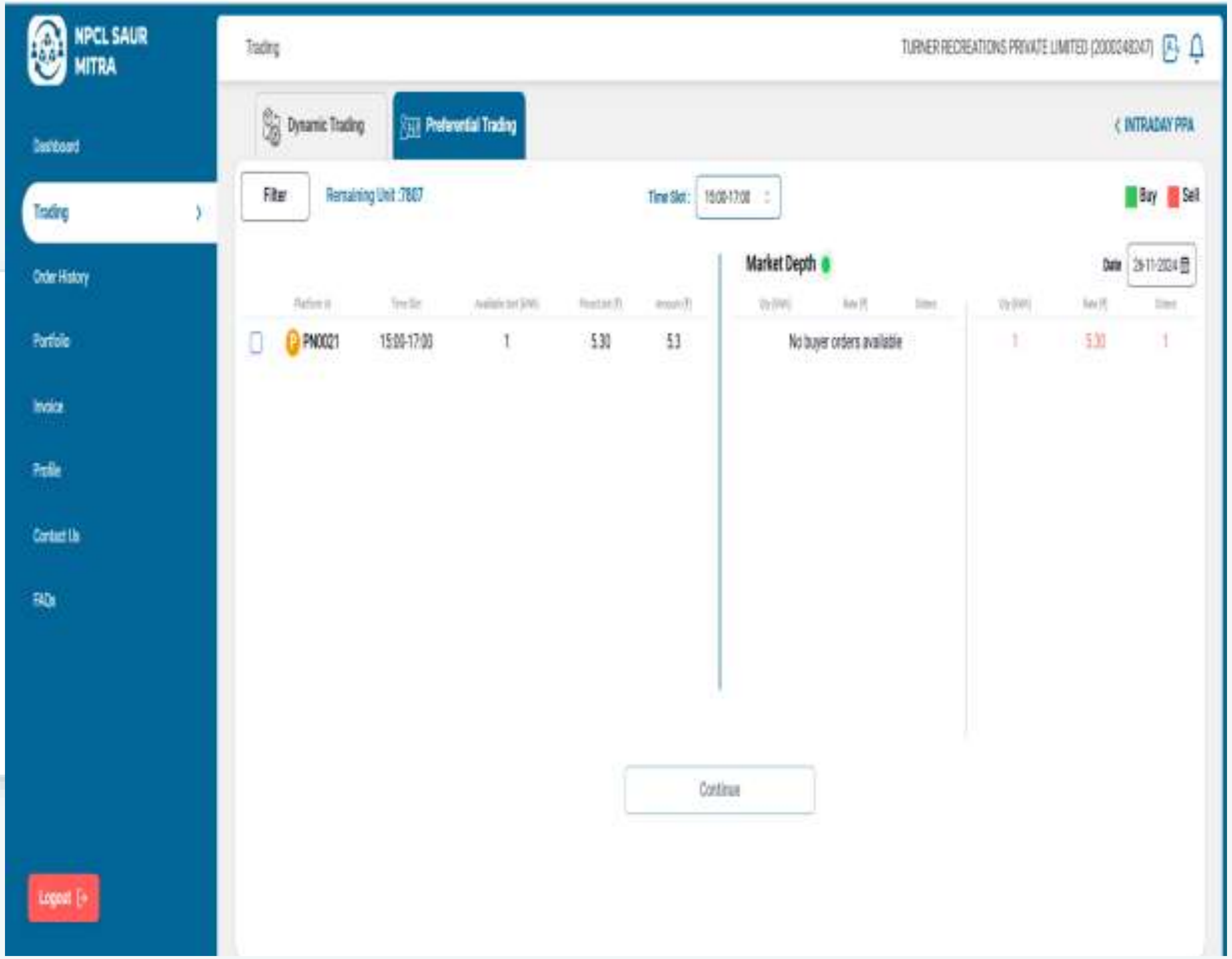
THE MARKET

Preferential Trading

- Sell option for prosumers, Buy option for consumers — with a filter and the remaining units for the month.
- A list of participants with checkbox, time slot, price/unit, available units and amount.
- Consumers choose their trading partner — and can select multiple prosumers if one can't meet demand.
- Filter participants by price (high/low) or units (high/low).
- Market Depth shows buy depth (green) and sell depth (red) for the day.



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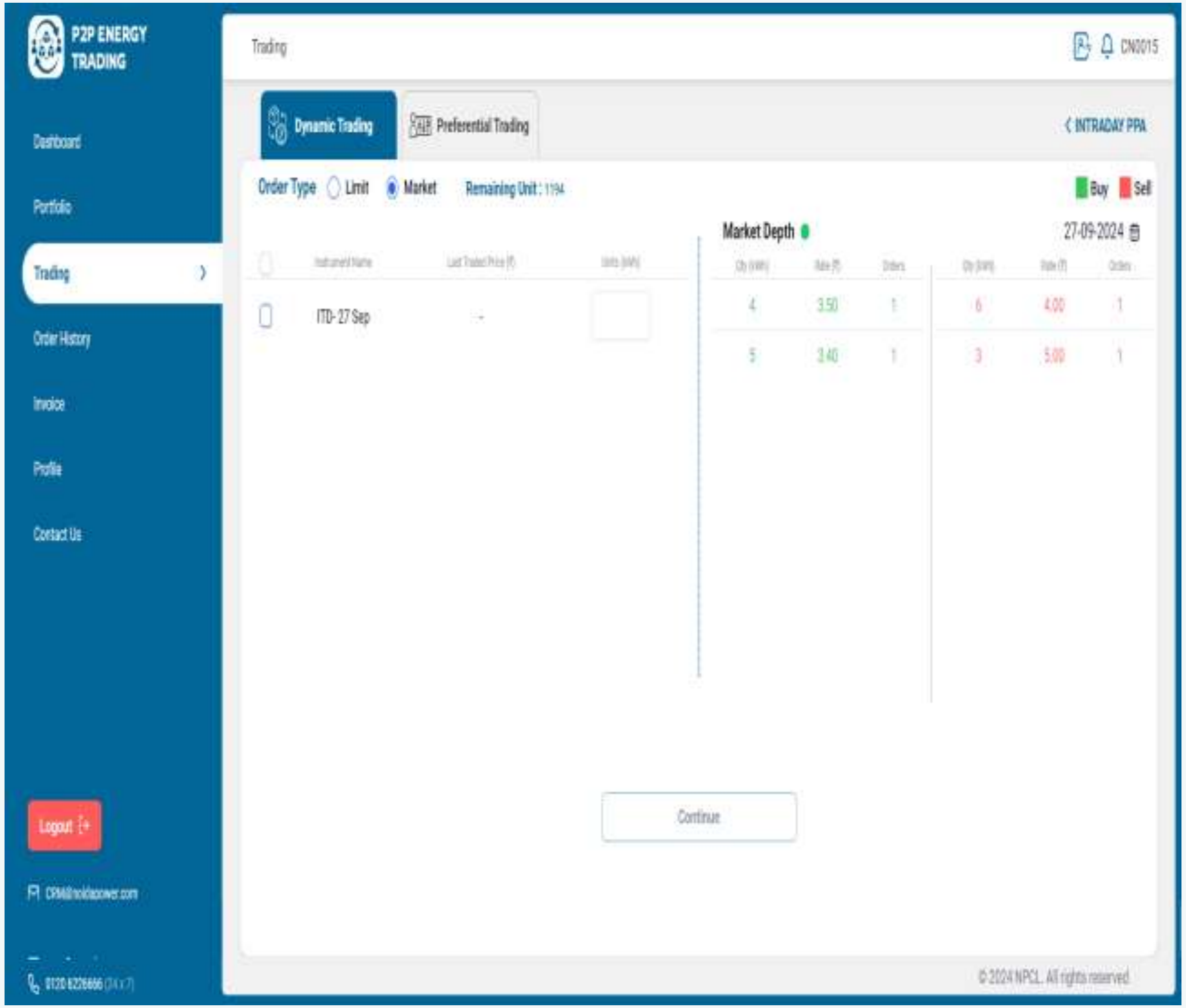
Placing a Market Order

1. From Trading, select Intraday or Day-Ahead PPA.
2. Choose order type Market and enter units only.
3. Click Continue — the trade executes at market price.
4. Review the estimated amount, then click Submit.
5. A "Request Submitted" pop-up appears; OK opens Order History.



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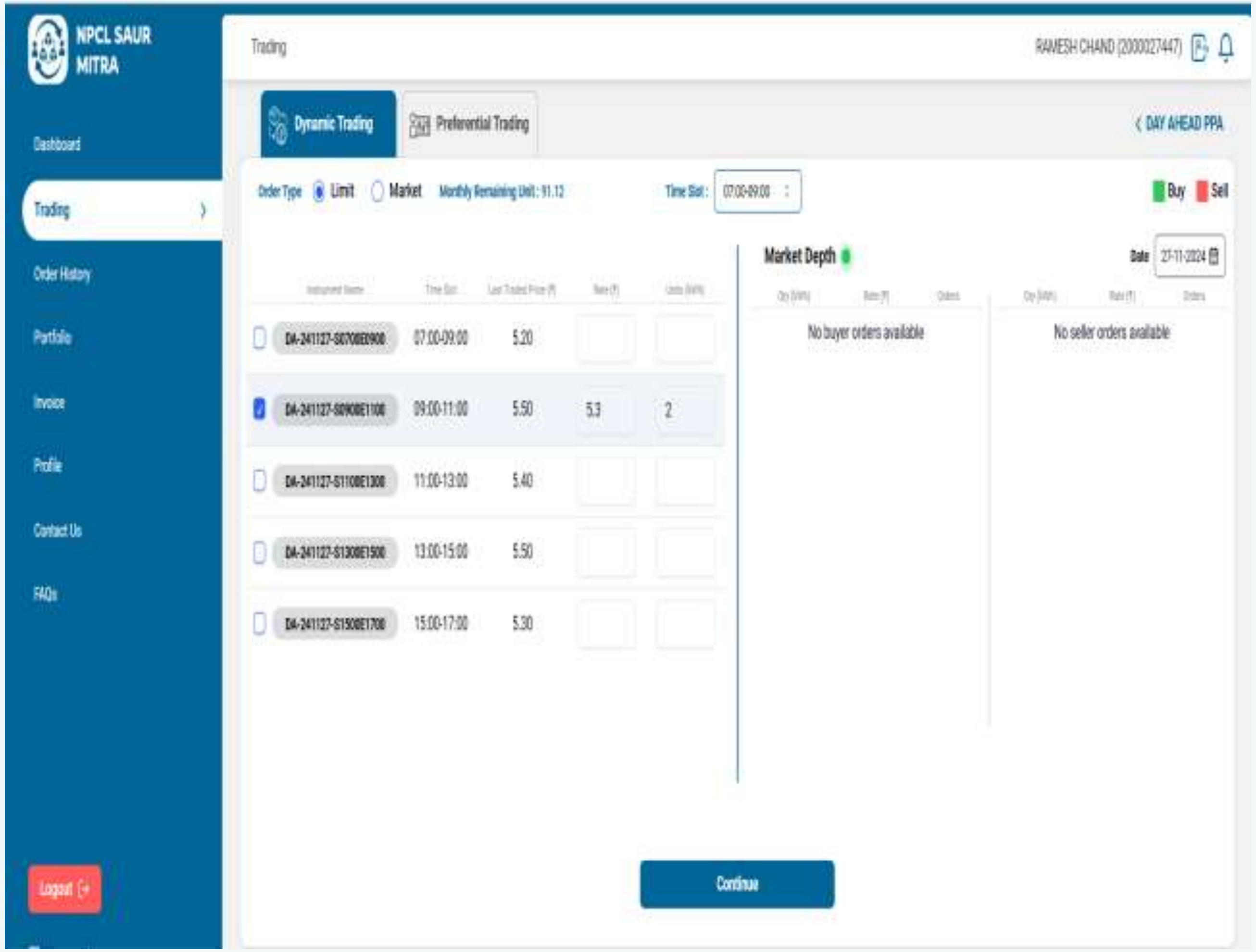
Placing a Limit Order — Confirmation

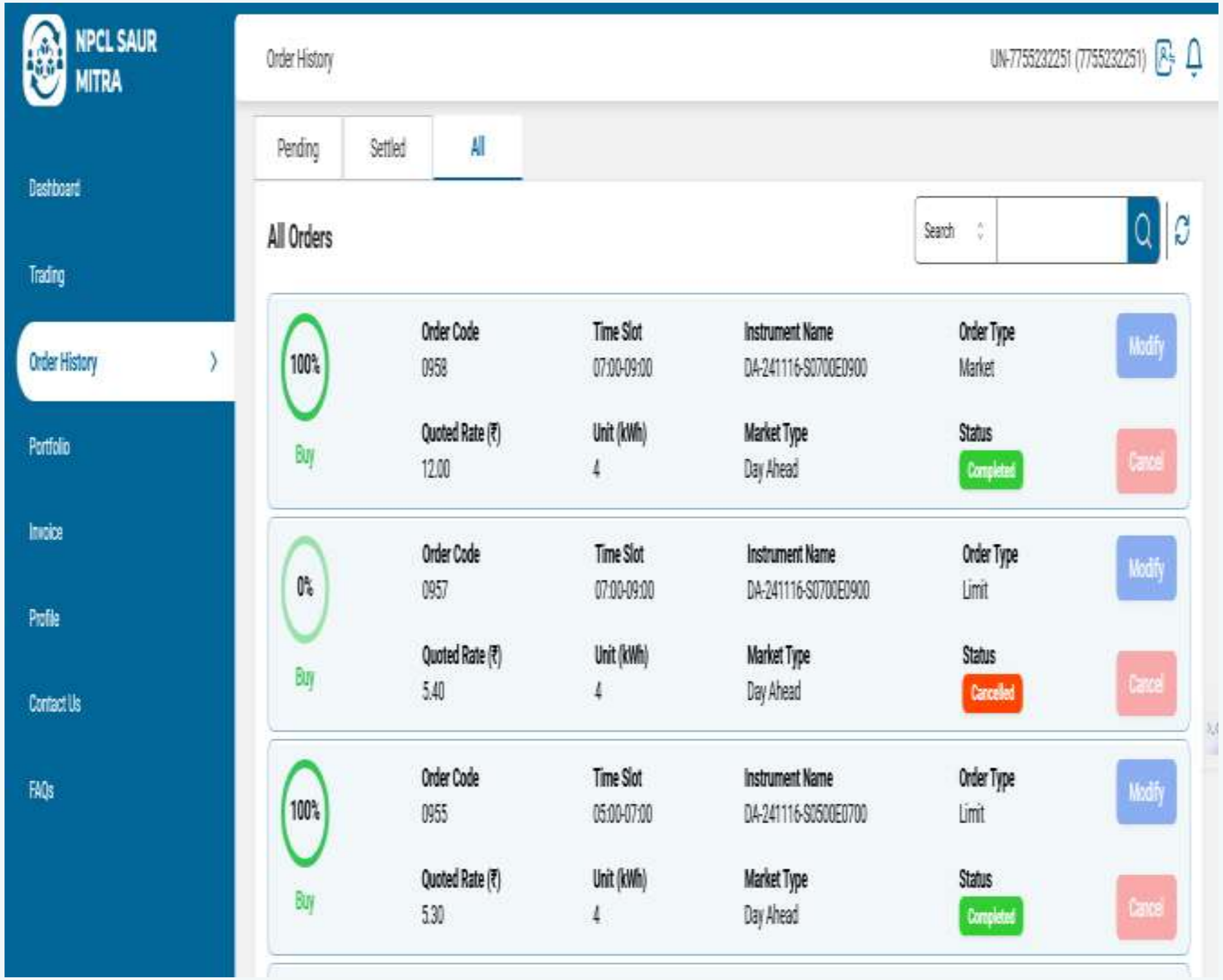
1. From Trading, select Intraday or Day-Ahead PPA.
2. Choose order type Limit.
3. Enter Units and Price (e.g. 4 units at ₹3.9).
4. Click Continue, review the estimate, then Submit.
5. A "Request Submitted" pop-up appears; OK opens Order History.



THE MARKET

Order History

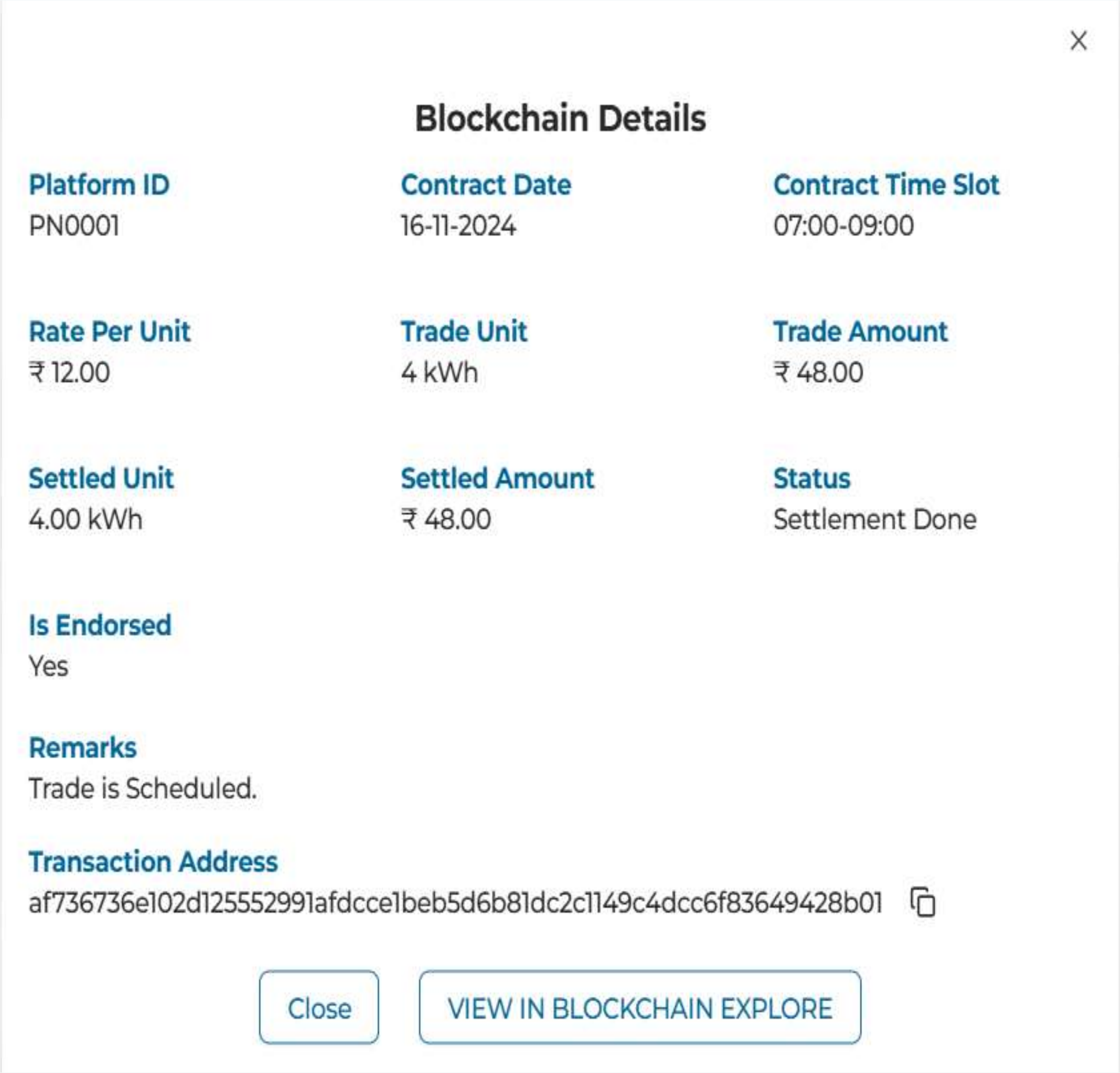
- Open Order History from the left menu — Pending orders show by default.
- Tabs for All and Settled orders; search by order ID and refresh on demand.
- Each order shows code, time slot, instrument, status, type, rate, units, amount and remaining units.
- Modify / Cancel are available only before execution.
- Click any order to view its blockchain transaction details.



THE MARKET

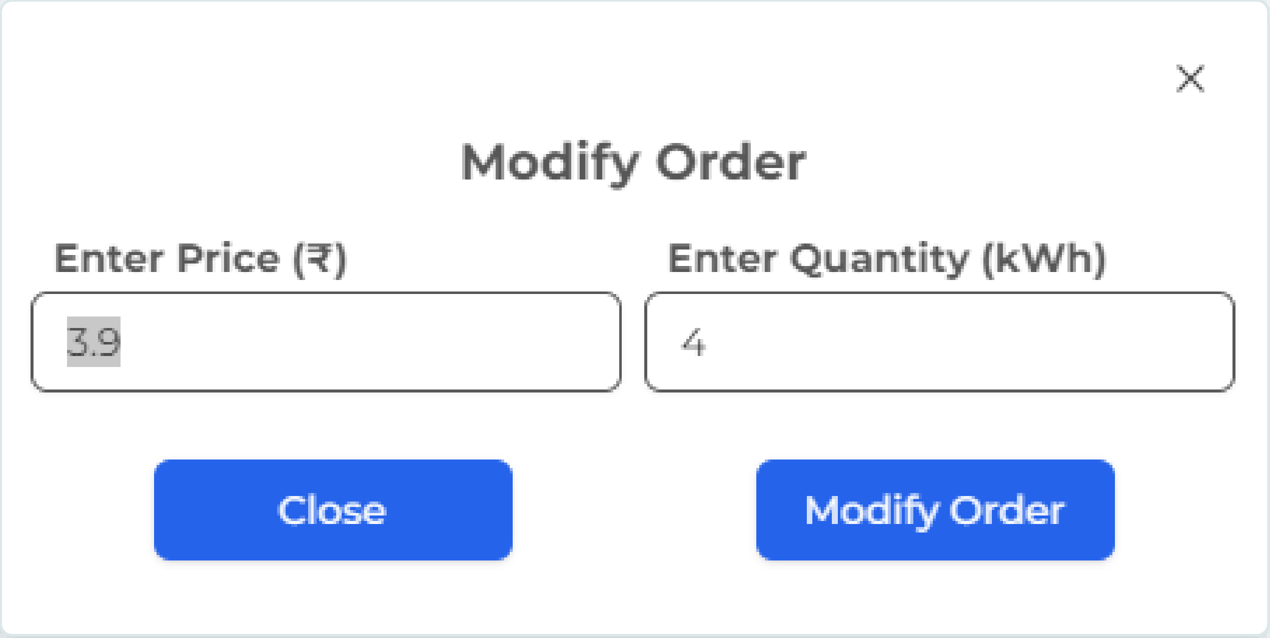
Verifying a Trade on the Blockchain

- Once an order is settled, check the settlement status on-chain via its transaction ID.
- The transaction details are displayed.
- Click "View in Blockchain Explorer" to open the full record.



Modifying an Order

- Open Order History from the left menu to see your orders.
- Click Modify on an order before it executes.
- Adjust the price and quantity, then click Modify Order to update.



Note: an order can be modified or cancelled only before it is executed.

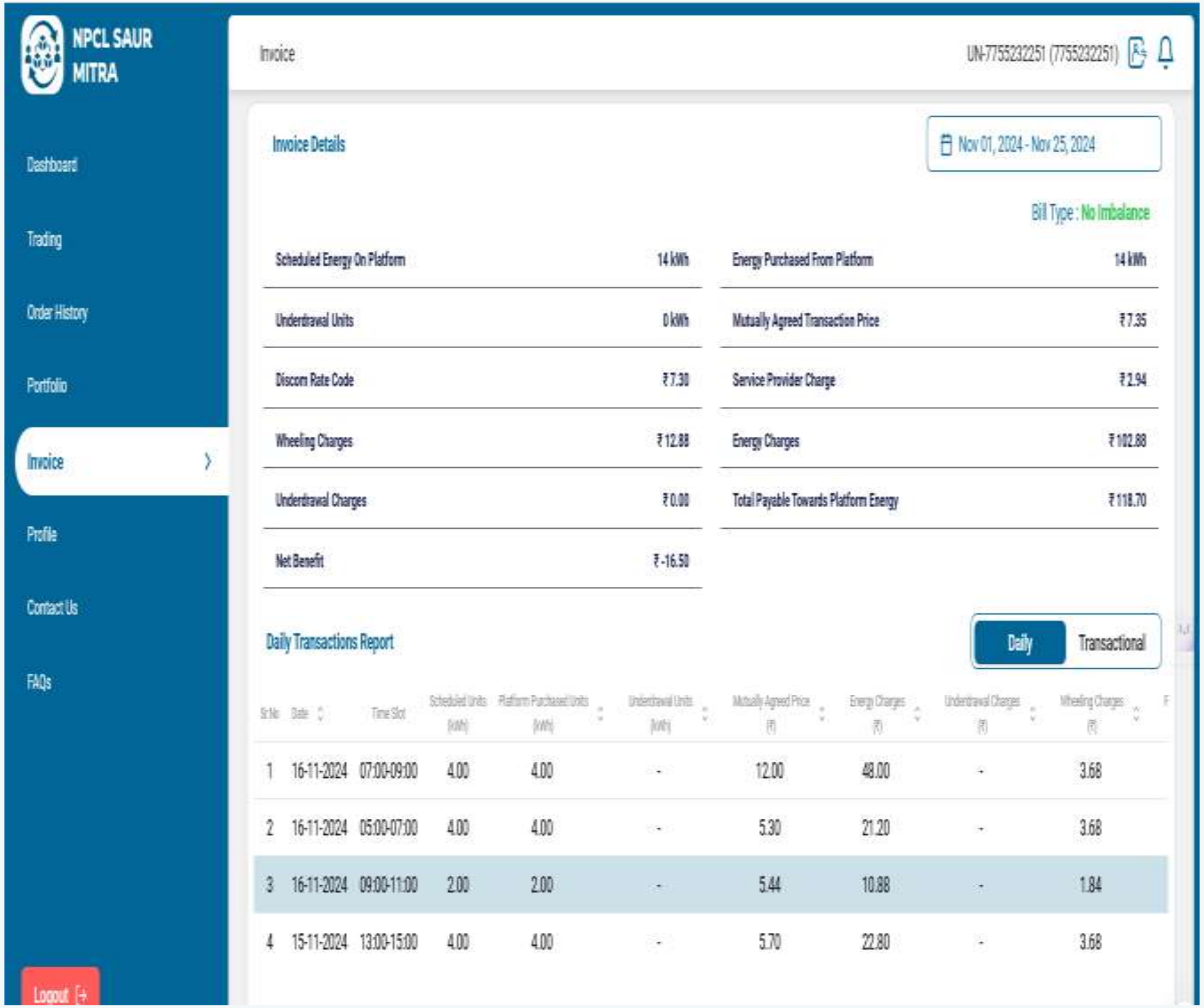
THE MARKET

Invoicing & Settlement

- Open Invoice from the left menu — Sell view for prosumers, Buy view for consumers.
- Pick a date range to fetch invoice and daily transaction reports.
- Invoices generate once a month, only after transactions settle.

BILL TYPES

No Imbalance · Under Injection · Over Injection · Under Drawl · Over Drawl



P2P CHARGES

SL. NO.	CHARGES	VALUE
1	Mutually Agreed Transaction Price	As agreed between P2P Prosumer & Consumer
2	Energy Demand Charges	As per UPERC Tariff Order
3	Transaction Charge	Fees charged by Service Provider for P2 solar energy transaction on P2P platform, as prescribed by the Commission.
4	Open Access Charges	
A	Wheeling Charges	As per UPERC Tariff Order
B	Additional Surcharge	Nill
C	Charges for Difference between schedule vs Actual	
C.1	Under Injection of Energy by P2P Prosumer	Payment -equivalent to difference between energy by the P2P energy charges as per rate schedule and Prosumer mutually agreed price on P2P Platform by P2P Prosumer
C.2	Over Injection of Energy by P2P Prosumer	Settlement of excess energy shall be done as by the Prosumer per the gross/net-meter /net-feed in arrangement of Prosumer. If no schedule is submitted by Prosumer, then the energy injected by him on nth day shall be adjusted as per the gross/netmeter /net-feed in arrangement of Prosumer.
C.3	Under Drawl of Energy by P2P Consumer	Full payment of quantum of energy pledged by P2P Consumer bv it on P2P platform to the P2P Prosumer/s)
C.4	Over Drawl of Energy by P2P Consumer	No penal charges. However, settlement shall P2P Consumer be done as per Note 1 below.

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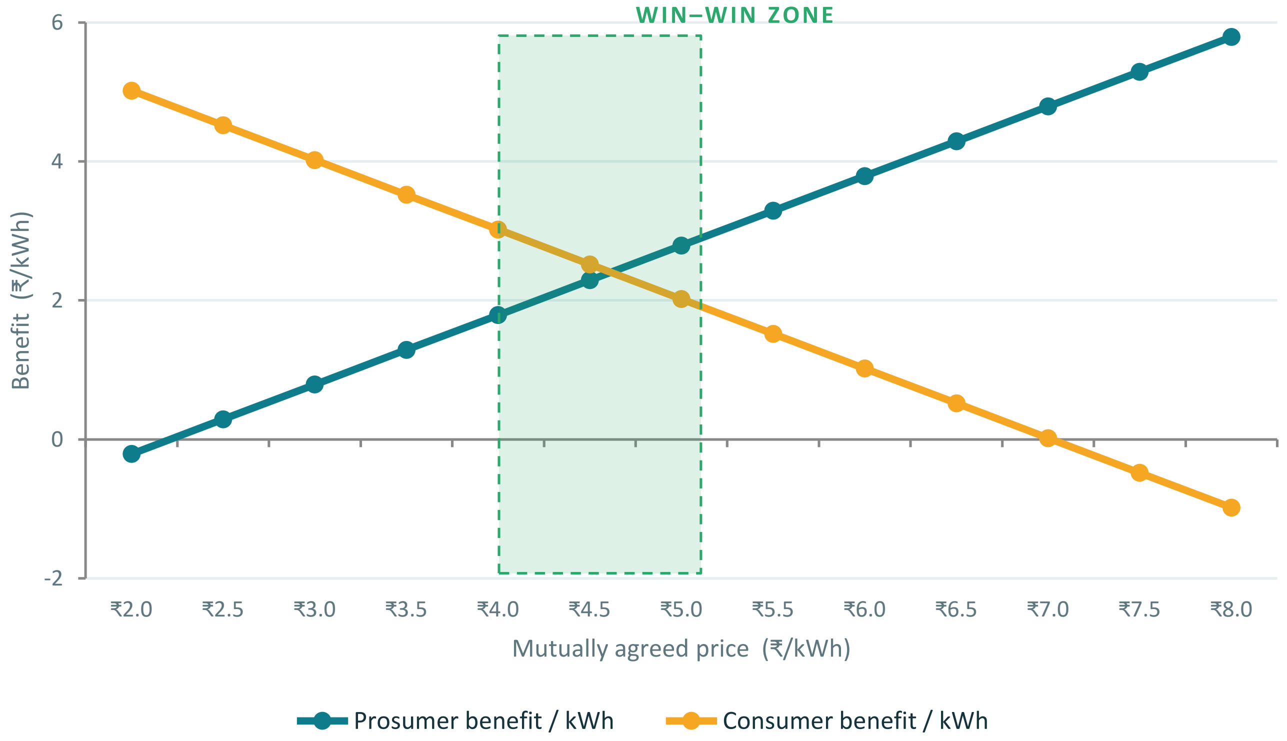
COMMERCIAL VIABILITY

The Win-Win Price Band

A market-discovered price of ₹4.0–5.0 per unit is the commercial sweet spot — even the domestic consumer saves ~20% on today's retail tariff while the prosumer earns well above the net-billing export value..



THE DEAL ZONE

₹4.0–5.0 /kWh

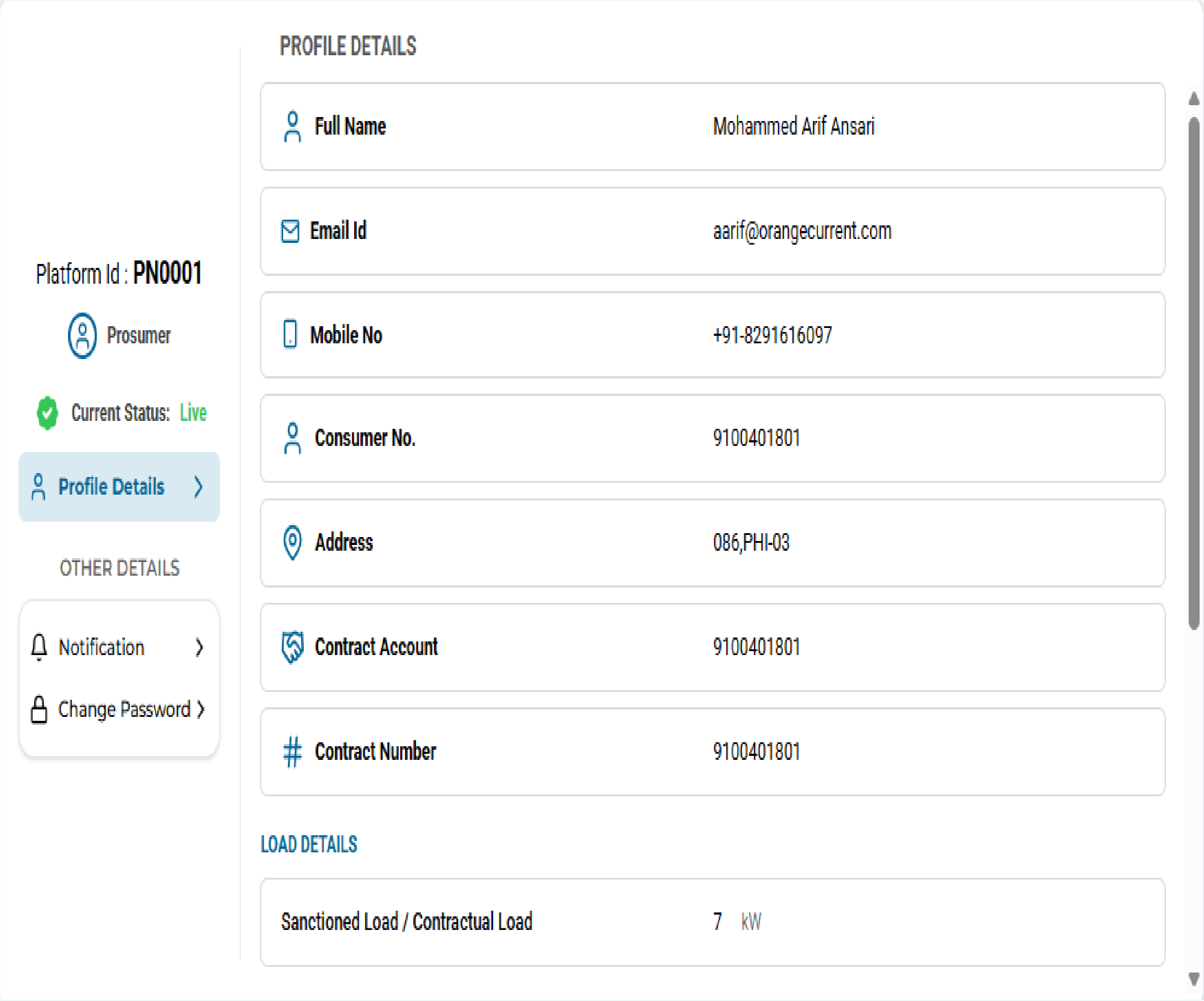
- Prosumer earns ₹1.5–2.5/unit — above the net-billingexport value.
- Consumer saves ₹1.5–2.5/unit — about 20% off the retail tariff.
- Below ₹4 the prosumer's margin thins; above ₹5.5 the consumer's saving erodes.

ACCOUNT

Profile

- **Open Profile from the left menu to view your profile details.**
- **Change Password lets the user update their password.**

Note: profile details cannot be edited directly on the P2P platform.

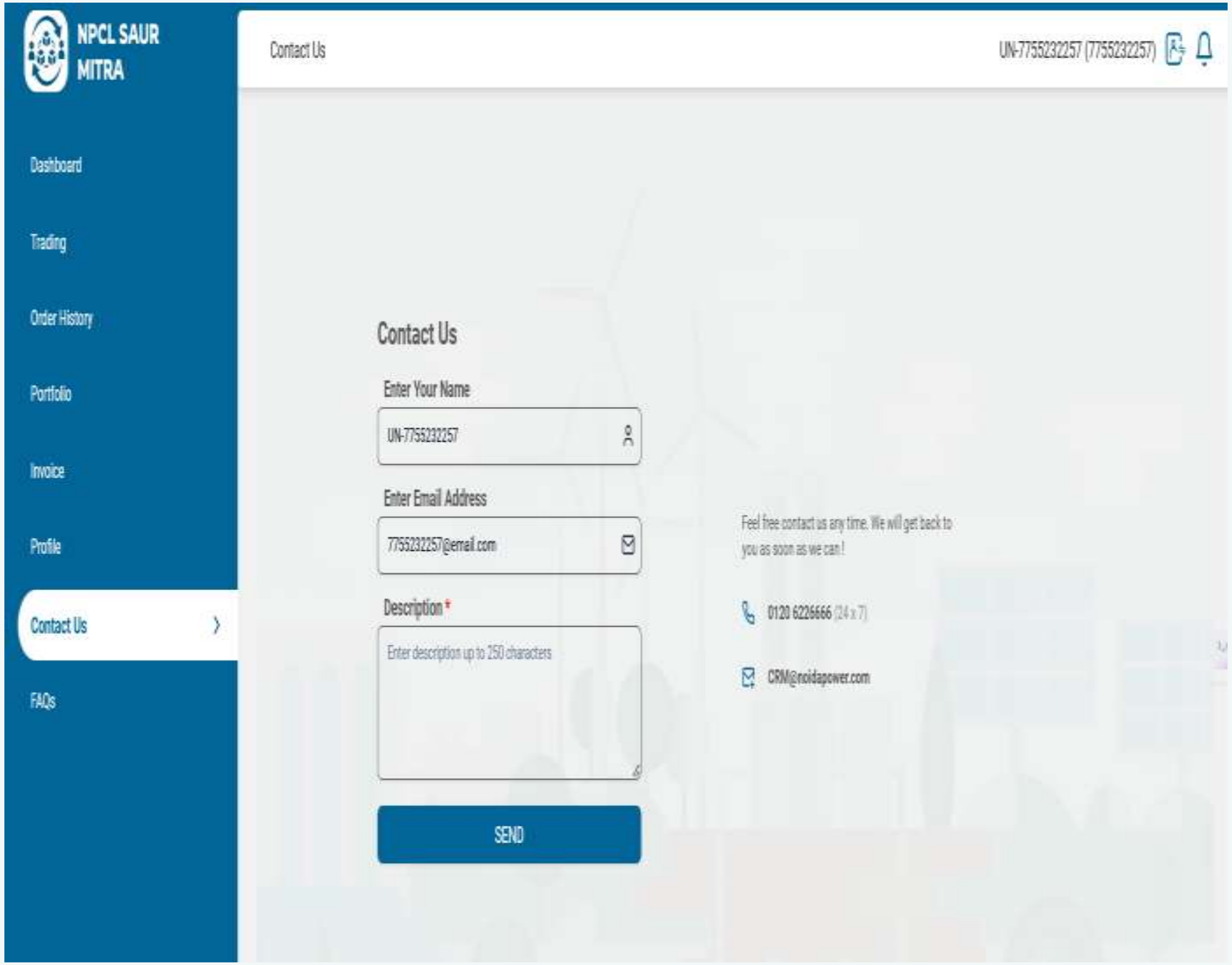


ACCOUNT

Contact Us

- **Your Name** — auto-filled; editable by the prosumer or consumer.
- **Email Address** — auto-filled; editable.
- **Description** — a free-text box, a Send button and contact details.

Note: P2P-related complaints are currently handled only through this channel.

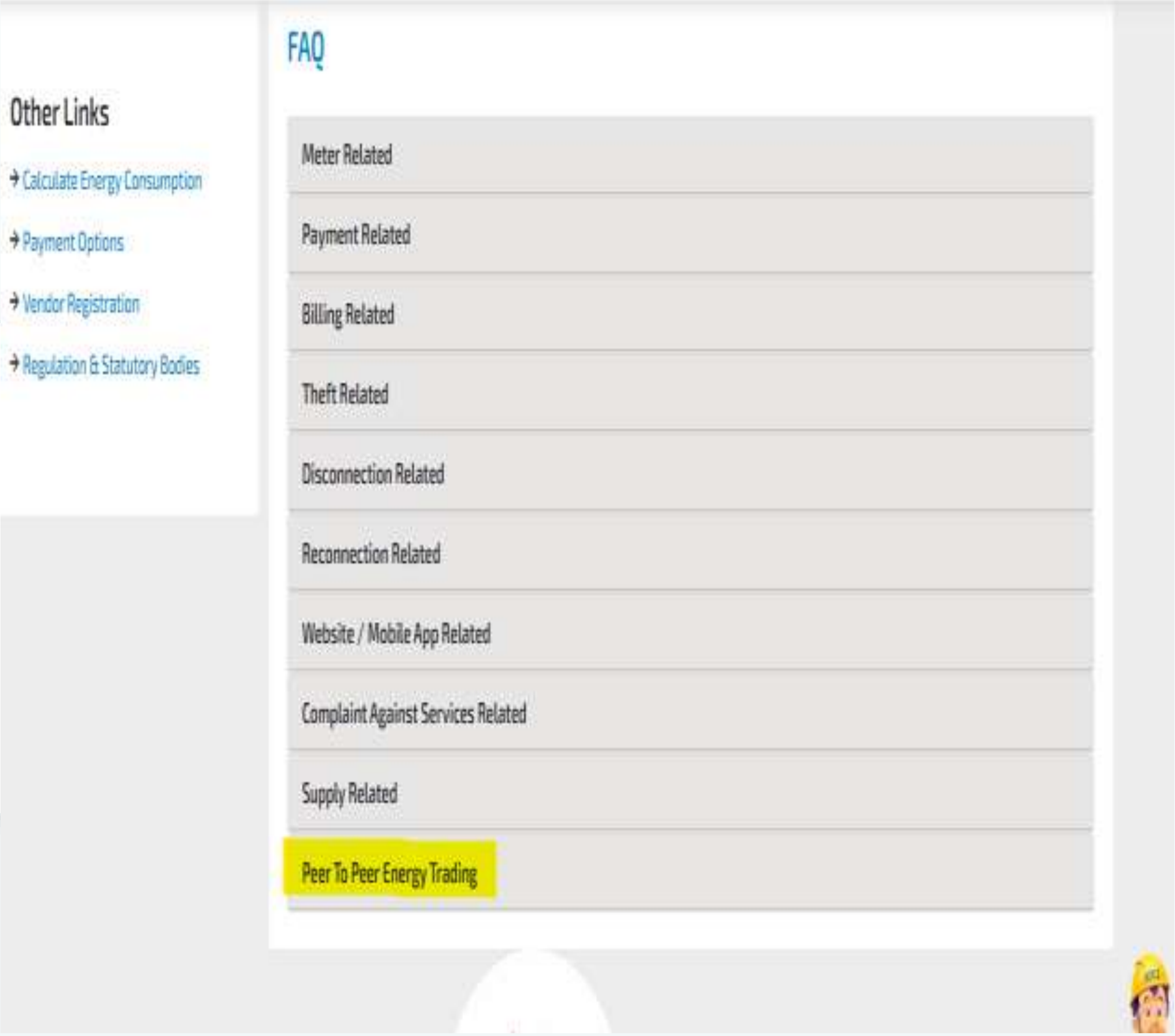


SUPPORT

Frequently Asked Questions

A dedicated FAQ section answers common questions about Peer-to-Peer Energy Trading.

Visit **noidapower.com/faq**



Thank You

Towards a decentralized, transparent and sustainable energy market.

Noida Power Company Limited (NPCL)

noidapower.com · AIDA Workshop, 23 June 2026